CONFIDENCE ABUNDANT AT NYS VEGETABLE GROWERS' CONFERENCE

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SYRACUSE, NY: New York State vegetable growers have good reason for the optimism they shared during the New York State Vegetable Conference held Feb. 8-10 in Syracuse, NY. The Empire State is the only state in the Northeast or Mid-Atlantic region to register a 10,000 acre increase in fresh market crops in 1999, as well as a steady increase in acreage devoted to the production of processing vegetables compared to five years ago.

Suggested caption: Dr. John Roberts (FS&T) examines onions.

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Over 1,200 growers, processors and allied industry representatives came from around the state, the Northeast and Canada to attend this major gathering. Now in its 12th year, it is consistently one of the top vegetable industry conferences in the Northeast. Exhibitors at the 80-plus company trade show reported good traffic on all three days.

All-day sessions focused on potatoes, sweet corn, onions, berries and small fruits. Half-day sessions were held on cabbage, snap beans, drip irrigation, herbs, carrots and beets, labor management, pumpkins and vine crops, tomatoes and peppers, and high quality greens. Talks included information on new varieties, plant breeding, innovative weed, pest and disease control, soil and fertility, marketing, and related topics.

Hot sessions included the new, half-day devoted to carrots and beets and the presentation on Stewart's Wilt in sweet corn. This bacterial disease reduced corn yields last year and growers are preparing to avoid yield losses this year. In cabbage, growers heard from Steve Greenberg about the Cabbage Research and Development Fund passed last year that will

raise $50,000 per year for cabbage research. Processing growers also heard form Lee Stivers about the NY Crop Research Facility in Batavia. This industry-sponsored farm had a great first year of operation in 1999.

The topic of the Becker Forum was "Genetically Modified Vegetable Crops: Are They Worth It?" This emotional topic was presented fairly and matter-of-factly, and was extremely informative for all the participants. See related story at

http://www.nysaes.cornell.edu/pubs/press/current/GMOveg.html

Here is a summary of the take-home messages from CCE and Cornell researchers.

CABBAGE

John Curtis, entomologist at the New York State Agricultural Experiment Station (NYSAES), reported on managing onion thrips in cabbage. "Successful control of onion thrips with insecticides will depend on the thrips susceptibility of the cabbage variety, more so than the insecticide," he said. "Insecticides appear to be ineffective on very susceptible cabbage varieties and not needed for tolerant varieties." Timed spray applications (e.g. cupping to heading) can be effective against moderately susceptible varieties, although late plantings can reduce thrips damage to acceptable levels which means that insecticides may not be necessary.

NYSAES entomologist Tony Shelton began his talk by asking the audience what insecticides they remembered using 50,40,30,20 and 10 years ago to control insects on cabbage. Many of the ones growers remembered have been replaced by new classes of insecticides. "Many of these newer materials are safer to both farm workers and to the natural enemies which help to control pest populations," said Shelton. As growers learn more about using these new materials in an overall IPM program, Shelton stressed the importance of using them properly so insects do not rapidly become resistant to them.

DRIP IRRIGATION

Drip irrigation is increasing in New York as a tool to supply water and nutrients. Larry Geohring, extension associate in agricultural and biological engineering (Ithaca), spoke on practical tools, told growers to schedule irrigation by keeping track of weather and crop growth variables to determine the amount of crop water use. By using this information along with the knowledge of the water holding capacity of their soil, a 'water bank' checkbook procedure can help determine when and how much to irrigate. "Tools like the tensiometer and watermark sensors can be used to calibrate their checkbook method and verify the soil moisture status," he said.

Fertigation can be an efficient way to both irrigate and fertilize crops based on water and nutrient needs. "To avoid common fertigation mistakes, growers must pay attention to their irrigation system watering uniformity, select an appropriate form of soluble fertilizer and fertilizer injector, time the amounts of fertilizer injection to crop growth requirements, and be careful when mixing various types of fertilizers," said Geohring.

ONIONS

In recent years, NY onion growers have expressed concerns about their ability to control onion thrips in their fields. Researchers suspected some degree of insecticide resistance. That finding was confirmed by Jody Gangloff, CCE support specialist, who said that onion thrips are highly resistant to commonly used pyrethroids, including the newest one available. "This resistance developed in a matter of two seasons and continues to intensify in some locations," she said. The bottom line? Onion growers need to practice resistance management, including the use of the economic threshold, according to Gangloff.

POTATOES

Professor emeritus Robert Plaisted (Ithaca), Cornell potato breeder par excellence, released two new potato varieties at the Vegetable Conference: Keuka Gold and Eva, both of which are golden nematode resistant tablestock varieties.

Bill Fry, plant pathologist (Ithaca), presented information to potato growers on how to suppress damage caused by *Phytophthora infestans*, the cause of potato late blight. "New strains of *P infestans* are still present in the USA/Canada, and retain their potential to cause devastating losses when weather favors their growth," said Fry. There was little problem with late blight in 1999 because of the dry growing conditions. Fry presented information on how to suppress disease if infections are detected in a crop. Some fungicides have "after-infection" efficacy, but others do not. Resistant cultivars are crucial to a long-term solution to the late blight problem, and there is some progress in breeding programs throughout the country. "A clone in Plaisted's program, NY121, has high levels of resistance and if adopted as a cultivar could probably contribute significantly to disease suppression," Fry reported.

William Brodie, professor of plant pathology (Ithaca), spoke to the potato group about golden nematode resistance. "The discovery of race Ro2 in NYS that can overcome the resistance in all present resistant potato varieties raises serious concerns about our ability to eliminate the threat of the golden nematode," said Brodie.

Marketing is the major limitation in the future of potato production in New York and other areas in the eastern US, according to Joseph B. Sieczka, associate professor at the Long Island Horticultural Research and Extension Center. " Innovative approaches in presenting potatoes that are identified for culinary characteristics, sized for specific uses and/or household sizes, and value-added pre-prepared products will help maintain the potato acreage grown in the region," he said.

PUMPKINS & VINE CROPS

Meg McGrath, plant pathologist (Ithaca), reported on managing powdery mildew and *Phytophthora.* "Managing powdery mildew, which occurs every year throughout NY, is challenged by fungicide resistance and lack of highly resistant varieties," she said. All growers need to be concerned about Phytophthora blight as it is increasing in importance and it is difficult to control once established. Cultural practices are recommended that minimize spread of the pathogen onto and around a farm and also practices that avoid high

soil moisture which favors the start of disease development.

Tom Zitter, plant pathologist (Ithaca), spoke on the reemergence of bacterial wilt of cucurbits, especially as a problem for pumpkin production. Pumpkin acreage has steadily increased in New York, which is now the second largest producing state in the nation (5,500 acres). Increased acreage coupled with higher cucumber beetle populations following two mild winters has contributed in part to the increased losses to bacterial wilt, he said.

TOMATOES AND PEPPERS

Robert Gravani, professor of food science (Ithaca), reported on reducing the microbial risks in fruits and vegetables. "Since 1987, there has been an increase in the number of produce-associated foodborne outbreaks that have involved a variety of fruits and vegetables," he said. In response to these statistics, several large food retailers have informed their produce suppliers that growers must have a certified plan for their farms that focuses on reducing microbial risks if they want to continue supplying fruits and vegetables.

To reduce the microbial risks in fruits and vegetables, growers need to use good agricultural practices and address key areas including water and manure use, farm worker hygiene, field transportation, and packing house sanitation. More information on reducing microbial risks in fruits and vegetables can be obtained by contacting: The NE Good Agricultural Practices Program, Department of Food Science, 11 Stocking Hall, Cornell University, Ithaca, NY 14853.

SNAP BEANS

Fertility studies on snap beans undertaken by newly tenured vegetable specialist Steve Reiners at the NYSAES seem to indicate that varieties vary in their response to nitrogen. "We can significantly increase tons/acre by adding 40 additional pounds of nitrogen per acre for two of the three varieties we tested," he said. Reiners will expand the project to look at more varieties and determine why some respond and others do not.

SWEET CORN

Sweet corn was plagued by Stewart's wilt in 1999, with substantial losses in both fresh and processing sweet corn. "It was prevalent because the corn flea beetle, the vector of the disease, was exceptionally abundant," said Lee Stivers, manager of the NY Crop Facility, who reported on the disease along with IPM Director Mike Hoffmann, plant pathologists Helene Dillard and Ann Cobb (Geneva). To help address this problem a multi-state team of investigators will evaluate a variety of management options and study the biology of flea beetle and pathogen this coming season. In anticipation of a repeat of 1999, growers should select Stewart's wilt tolerant varieties, where practical, said Stivers.

Curt Petzoldt, assistant director of the NYS IPM program reported on his evaluation trials for crop and pest management in fresh market sweet corn. Four sweet corn pest and crop management systems were defined and implemented at NYSAES Geneva (1995-1999)-Organic, IPM/Present, IPM/Future, and Conventional. The systems were

compared on the basis of economics, pest control efficacy and environmental impact. "On average, all four systems were profitable although the Organic System was significantly less profitable," reported Petzoldt, although all four resulted in acceptable levels of insect damage for their particular markets. The Organic system used significantly fewer pesticide applications and pounds of fertilizer than the other three systems. "Results indicate that there is no one system of growing sweet corn in New York that is clearly better than another from all three viewpoints of economics, efficacy, and environment," said Petzoldt. "There are clear advantages to certain systems based on what goals are to be optimized. IPM systems appear to be reasonable compromises that attain high economic return while reducing environmental impact."

Plant breeder Margaret Smith (Ithaca), reported on the future of Bt sweet corn. "Concerns about Bt pollen effects on non-target insects (like monarch butterflies) focus primarily on field corn, because it is planted on much more acreage than sweet corn and is not routinely treated with insecticides for European corn borer control as sweet corn is," she said. Recent research suggests the effects on monarchs are not likely to be dire, but there are still important unanswered questions that could alter that conclusion. Little, if anything, is known about potential effects of Bt corn pollen on other non-target butterfly and moth larvae, she said.

For the future, Smith said producers need to consider the costs and benefits of growing Bt sweet corn. "There is potential to save money and minimize environmental impacts by reducing insecticide sprays, but seed cost is higher," she said. Presently, there are also concerns about marketability, resulting from consumer concerns about issues like food safety and the ethics of genetic engineering. The cost/benefit analysis will certainly be case-specific. Areas like New York, where pest-free sweet corn can be produced with relatively few sprays are less likely to benefit from Bt technology.

SMALL FRUITS

Bob Kime, who manages the Fruit and Vegetable Pilot Processing Plant at the NYSAES, reported on blueberry wine production, offering samples to taste and evaluate to the ever-appreciate growers always looking for value-added ways to increase their bottom line and use more berries.

Mary Jo Kelly, in fruit and vegetable science (Ithaca), reported several new cultivation implements that were tested as alternatives to herbicide use and traditional cultivation practices in strawberries-the flex tine harrow, the finger weeder, and the brush hoe. Of these, the brush hoe showed the most promise, she said. "It controlled weeds effectively without affecting yield and fruit size, and costs associated with its use were moderate." Slight modifications to its present design may further improve its ability to control weeds in newly planted strawberries.

The Vegetable Conference is co-sponsored by Cornell Cooperative Extension/NYS College of Agriculture and Life Sciences, the NYS Vegetable Growers Association, the Empire State Potato Growers, and the Associated NYS Food Processors.

The 225-page proceedings are available for $20 from the NYS Vegetable Growers Association, Inc., P.O. Box 4256, Ithaca, NY 14852-4256; (phone) 607-539-7648; (fax) 607-539-3150; (email) nysvga@clarityconnect.com